REMARKS

Initially, in the Office Action dated September 15, 2003, the Examiner rejects claims 1, 3-7, 9-12 and 14-24 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,790,606 (Dent). Claims 2, 8 and 13 have been rejected under 35 U.S.C. §103(a) a being unpatentable over Dent. Claim 25 has been allowed.

ALLOWED CLAIM

Applicants thank the Examiner for allowing claim 25.

35 U.S.C. §102 REJECTIONS

Claims 1, 3-7, 9-12 and 14-24 have been rejected in under 35 U.S.C. §102(b) as being anticipated by Dent. Applicants respectfully traverse these rejections.

Dent discloses joint demodulation using spatial maximum likelihood. Processing signals and radio communication systems are described which include processes for handling co-channel interference while reducing the number of Viterbi states being processed. A spatial analogy to the Viterbi MLSE process is provided. Both the uplink and downlink cases are described.

Regarding claims 1 and 12, Applicants submit that Dent does not disclose or suggest the limitations in the combination of each of these claims of, inter alia, comparing a consecutive sequence with all possible valid modulated sampled signals, or determining a bit decision representing a demodulation of the consecutive sequence of the modulated sampled signal, the determination made being based on a valid modulated sampled signal located closest to the consecutive sequence of the modulated sampled signal in a constellation. The Examiner asserts that these

limitations are disclosed in Dent with the signal prediction value, Table 7, and col. 16, line 63 - col. 17, line 8. However, these portions of Dent merely disclose that a Viterbi controller compares the sumsquare metric for the first (leading) bit equal to 0 and equal to 1 respectively for each combination of the other bits and picks the smaller of the two, and that the Viterbi controller knows which other bits must be hypothesized since signal predictor 140 provides a compendium of the other bits needed to predict the antenna signals used for demodulating the leading bit. This compendium is effectively a logical OR of the rows of Table 7 that contains a cross for the bit being demodulated. This is not comparing the consecutive sequence with all possible valid modulated sample signals, as recited in the claims of the present application. Dent relates to processes for handling code-channel interference while reducing the number of Viterbi states being processed. Dent discloses the signal predictor providing a compendium of bits for prediction where the compendium is a logical OR of the rows of Table 7. This is not a consecutive sequence with all possible valid modulated sample signals. Moreover, Dent does not disclose or suggest determining a bit decision representing a demodulation of the consecutive sequence of the modulated sampled signal, where the determination is made based on a valid modulated sampled signal located closest to the consecutive sequence of the modulated sample signal in a constellation. Dent does not disclose or suggest a valid modulated sample signal being located closest to the consecutive sequence of the modulated sample signal in a constellation, as recited in the claims of the present application.

Regarding claim 17, Applicants submit that Dent does not disclose or suggest the limitations in the combination of this claim of, inter alia, a demodulator that includes a quantizer that receives an input modulated waveform and quantizes the input modulated waveform producing quantized data, or at least one memory device operatively connected to the quantizer that contains bit decisions representing the modulation of the input modulated waveform where the quantized data is used to form an address to the at least one memory device. The Examiner asserts that Riggle et al. [sic] discloses a quantizer receiving an input modulated waveform as the digitized sample on col. 15, line 14 and discloses the input modulated waveform producing quantized data as the same digitized sample on col. 15, line 14. Applicants assume the Examiner refers to Dent. Clearly, the digitized sample in Dent is not both an input modulated waveform and quantized data produced by a quantizer quantizing the input modulated waveform, as the Examiner asserts. The Examiner further asserts that Dent discloses at least one memory device as Table 7, and Items 160, 150. However, Table 7 is not a memory device, Item 150 is a variable state Viterbi controller, and Item 160 is a state memory. Moreover, neither items 150 nor 160 are operatively connected to a quantizer, as recited in the claims of the present application. Dent does not disclose or suggest anything related to a quantizer. Further, Dent does not disclose or suggest quantized data being used to form an address to a memory device, as recited in the claims of the present application.

Regarding claims 3-7, 9, 10, 11, 14-16 and 18-24, Applicants submit that these claims are dependent on one of independent claims 1, 12 and 17 and, therefore, are patentable at least for the same reasons noted regarding these independent claims.

Accordingly, Applicants submit that Dent does not disclose or suggest the limitations in the combination of each of claims 1, 3-7, 9-12 and 14-24 of the present application. Applicants respectfully request that these rejections be withdrawn and that these claims be allowed.

35 U.S.C. §103 REJECTIONS

Claims 2, 8 and 13 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Dent. Applicants respectfully traverse these rejections. The Examiner asserts that Dent discloses every aspect of Applicants' claimed invention except for the limitations in these claims, and asserts that the limitations in these claims are obvious since "a recitation is intended to be employed does not differentiate the claimed method from a prior art system satisfying the claimed method limitation" and that Dent discloses a sumsquare error result for comparing modulated signal of sequence signal which discloses measuring a cosine of a phase difference between the consecutive sequence and each valid modulated signal, as recited in the claims of the present application. However, as noted previously, Dent does not disclose every aspect of Applicants' claimed invention and in fact has significant defects regarding the limitations in the claims of the present application. Applicants submit that claims 2, 8 and 13 are dependent on one of independent

claims 1 and 12 noted previously and, therefore, are patentable at least for the same reasons noted regarding these independent claims.

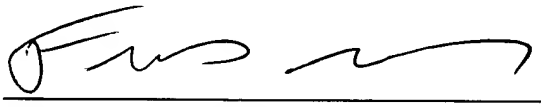
Accordingly, Applicants submit that Dent does not disclose, suggest or render obvious the limitations in the combination of each of claims 2, 8 and 13 of the present application. Applicants respectfully request that these rejections be withdrawn and that these claims be allowed.

In view of the foregoing amendments and remarks, Applicants submit that claims 1-25 are now in condition for allowance. Accordingly, early allowance of such claims is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (referencing attorney docket no. 199.37718X00).

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP



Frederick D. Bailey
Registration No. 42,282

FDB/sdb
(703) 312-6600